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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/686,527	10/16/2003	V.S. Meenakshi Sundaram	Serie 6057	3996
7590	04/29/2009	Linda K. Russell, Patent Counsel Air Liquide Suite 1800 2700 Post Oak Blvd. Houston, TX 77056	EXAMINER PHASGE, ARUN S	
			ART UNIT 1795	PAPER NUMBER
			MAIL DATE 04/29/2009	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/686,527	SUNDARAM ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Arun S. Phasge	1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 14 January 2009.

2a) This action is **FINAL**.                    2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-4, 11-16, 18-34, 36-38 and 41-56 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 1-4, 11-16, 18-34, 36-387, 41-56 is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All    b) Some \* c) None of:

- Certified copies of the priority documents have been received.
- Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
- Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) Notice of References Cited (PTO-892)

2) Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.

4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.

5) Notice of Informal Patent Application

6) Other: \_\_\_\_\_.

**DETAILED ACTION**

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

***Claim Rejections - 35 USC § 103***

Claims s 1-4, 11-16, 18-29, 34, 37-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baker in view of Hatano of record for reasons of record and further in view of Smith of record.

Barker discloses the claimed method and system for generating polysulfide in pulping liquor comprising the sodium sulfide, providing the claimed oxidation promoter (see Abstract). The reference further discloses the claimed substrate and coating the oxidation promoter (see col. 2, lines 34-40). The patent further teaches the use of the same type of oxygen containing gas (see abstract). The patent teaches the same types of substrates and oxidation promoters (see col. 2, lines 34-68). The oxidation promoter may be mobile or fixed (see col. 2, lines 20-40). The temperature disclosed would be within the range claimed (see claim 11). The patent further discloses the oxidizing agent is contacted with the oxidation promoter when the promoter is in minimal contact with the pulping liquor (see col. 7, lines 9-12).

The Barker patent fails to disclose some of the modifications to the shape of the reactor and oxidation promoter elements. The invention as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the disclosure of the Smith to change the shape of the reactor, because such modification to shape has been well settled to be within the purview of the ordinary artisan, unless the change produces an unexpected result.

The Barker patent while disclosing the coating of the oxidant promoter onto the substrate fails to disclose the use of the coating material such that the oxidation promoter is adhered by the coating material to the substrate.

The Hatano patent is cited to show the use of a coating material to adhere a catalyst to a substrate, wherein the catalyst, coating layer and substrate are the same as the layers claimed (see claims 1-6). The reference further teaches the use of heat to bake the oxidation promoter and coating as claimed (see abstract).

The Hatano patent discloses an inorganic coating and does not teach the newly narrowed claim drawn to an organic polymer coating. The Smith patent is re-introduced to show that such a modification between an inorganic coating, such as silica and the claimed organic polymer coating would have been obvious to one having ordinary skill in the art, because they are readily substituted to wetproof the catalyst during the catalytic treatment of sulfide as claimed (see col. 10, lines 19-26).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the combination of Barker and Hatano by the teachings of Smith.

One having ordinary skill in the art would have been motivated to do this modification, because Smith teaches the functional equivalence between the inorganic coatings and the organic coatings as wetproofing agents in the prevention of flooding of the catalysts.

Claims 30-33, 36 and 40-56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baker in view of Hatano and Smith as applied to claims above, and further in view of Dorris of record for reasons of record.

### ***Response to Arguments***

Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection.

With respect to claim 24, applicants argue that combination of references fail to disclose, teach or suggest, "the at least one oxidizing agent is contacted with the at least one oxidation promoter element when the at least one oxidation promoter element is in minimal or no contact with the pulping liquor, and the pulping liquor is contacted with the at least one oxidation promoter element when the at least one

oxidation promoter element is in minimal or no contact with the at least one oxidizing agent."

As shown above, the Barker patent does disclose such a limitation, because the oxidation promoter is regenerated in the absence of the oxidizing agent.

With respect to the claims 37-39 applicants argue that "To the extent that Barker addresses the above limitations, it discloses recycling of a slurry of catalytic metal compound from a bottom of a reaction tower to above the mid-point of the tower with no reconditioning or static placement of catalytic metal compound in a packed tower (col 2, Ins. 20-44 and FIGS 1-2). Thus, it fails to disclose a substrate rotatably secured to a support member to facilitate movement of the substrate between a polysulfide generation zone and a recovery zone."

Contrary to this reading, the Baker patent discloses the reconditioning of the catalysts before the recycle of the catalyst (see col. 7, line 40- col. 8, line 2). To rotate the catalyst between the reaction zone and the regeneration zone would have been obvious to one having ordinary skill in the art in particular given the disclosure of Barker that size of the equipment, scale of regeneration, production requirements and "continuous" verses "around the clock" batch considerations are taken into account when optimizing a polysulfide pulping process (see col. 3, lines 60-65).

Applicants further argue the combination of Dorris with the Barker patent by stating "With respect to claims 44 and 54, Applicant further traverses because Barker, Hatano, and Dorris, alone or in combination, fail to disclose, teach, or

suggest at least one disc being rotatable with respect to polysulfide generation and recovery zones to selectively situate the at least one oxidation promoter element within each of the polysulfide generation zone and the recovery zone. Thus, the rejection of claims 44 and 54 should be withdrawn.

With respect to claim 50, Applicant further traverses because Barker, Naeem, Hatano, and Dorris, alone or in combination, fail to disclose, teach, or suggest a substrate rotatably secured to a support member to facilitate movement of the substrate between a polysulfide generation zone and a recovery zone. Thus, the rejection of claims 44 and 54 should be withdrawn. “

The Dorris patent shows the use of a rotatable disc that moves the catalysts around a reactor (see figure 3 and col. 8, lines 13-25).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Baker showing the movement of catalysts particles from the reactor to a regeneration zone by the teachings of Dorris.

One having ordinary skill in the art would have been motivated to do this modification, because the Dorris patent teaches that the use of a rotating stirrer moves the catalysts around.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Arun S. Phasge whose telephone number is (571) 272-1345. The examiner can normally be reached on MONDAY-THURSDAY, 7:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam X. Nguyen can be reached on (571) 272-1342. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Arun S. Phasge/  
Primary Examiner, Art Unit 1795

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